

September 2016 Climate Review for Puerto Rico and U.S. Virgin Islands.

Synopsis: *Below normal rainfall was observed across mucho of the area except over Northwest Puerto Rico and Culebra. Warm to hot temperatures prevailed across local islands. There is a slight shift in probabilities to near to above normal rainfall during Oct-Nov-Dec.*

Summary

A seasonable weather pattern prevailed across Puerto Rico and the U.S. Virgin Islands throughout the month. Diurnal and locally induced convection was observed most afternoons across portions of interior and western PR, resulting locally heavy rainfall activity. Two significant weather events affected the islands during the month. On September 5th, a strong tropical wave affected the islands, producing squally weather conditions with periods of heavy showers producing wind gusts over 30 mph in several locations across Puerto Rico and the U.S. Virgin Islands. On September 28th-30th tropical cyclone Matthew, which passed 300-400 miles south of the region, produced hazardous seas along with periods of squally weather that also resulted wind gusts at times over 30 mph.

Based on the Cooperative Observer Network Data (COOP), 65 percent of the normal rainfall was observed across Puerto Rico. Preliminarily, an average rainfall total of 5.07 inches was measured, which is 2.74 inches below normal (Table 1). Shower and thunder activity in September mainly missed the southwestern and south-central sections of the island where abnormally dry conditions as well as moderate drought conditions are still observed. Across the U.S. Virgin Islands, 31 and 57 percent of the normal rainfall was observed across Saint Thomas and Saint Croix, respectively (Table 1). The mean temperature for Puerto Rico was 80.9°F, which is approximately 1.7°F warmer than the 30-year average from the National Centers for Environmental Information (NCEI). Temperatures across Puerto Rico ranged from 98°F in Ponce on the 29th of September, to 63°F in Maricao on September 19th. The mean temperature at TISX and TIST was 82.5 and 85.1°F, which is 0.6 °F below and 1.1°F above normal, respectively. In fact, September 2016 ended as the 4th warmest September on record at IST.

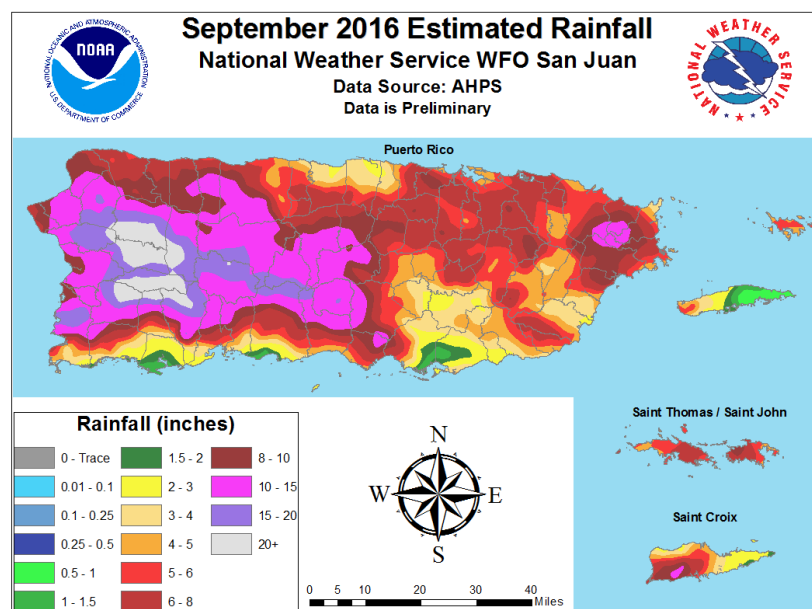
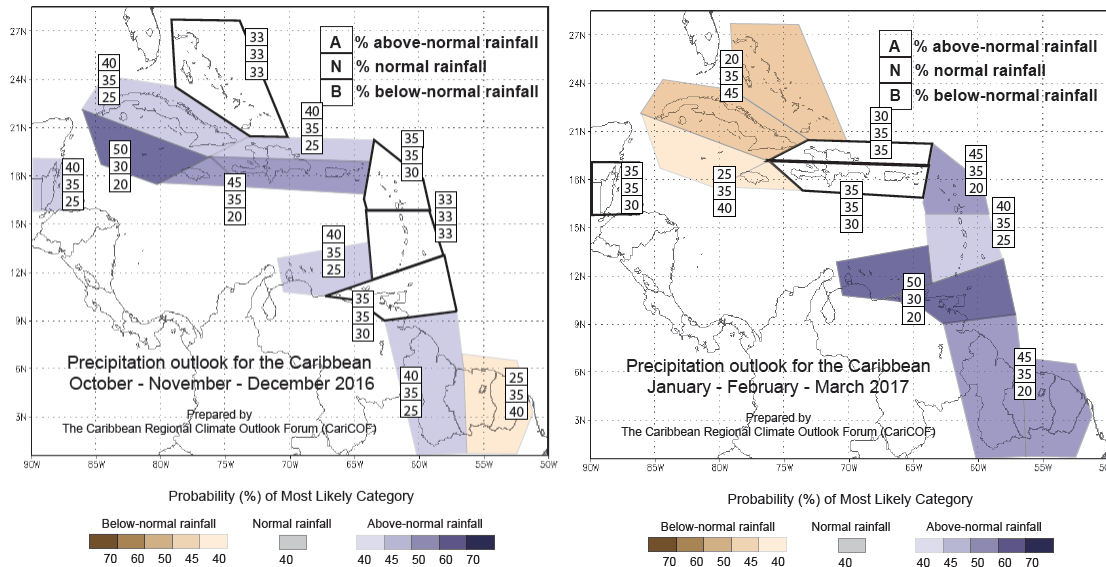


Figure 1. Rainfall Totals based on AHPS

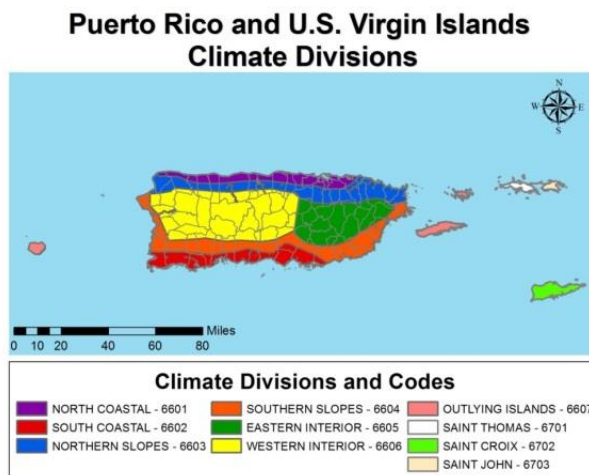
Looking Ahead

Sea Surface Temperatures (SSTs) in El Niño region are currently slightly below. A large majority of models suggests temperature anomalies to remain slightly negative, with either a developing weak La Niña or cold-neutral ENSO conditions. Tropical North Atlantic SSTs tend to be warmer than average during a developing La Niña, and are currently slightly above average throughout the Caribbean Islands. Small positive SST anomalies are expected to persist throughout the region and portions of the Tropical North Atlantic during SON and DJF. At this time, rainfall is likely to be near to above normal across the local islands during OND.



More Info: <http://rcc.cimh.edu.bb/long-range-forecasts/caricof-climate-outlooks/>

Average Rainfall Accumulation per climate zones based on COOP



	North Coastal	South Coastal	Northern Slopes	Southern Slopes	Eastern Interior	Western Interior	All PR	St Croix	St Thomas
Observed (Sep)	4.43	2.28	3.11	4.17	6.02	8.43	5.07	2.82	1.67
Normal (Sep)	7.32	5.84	6.64	8.29	9.87	8.87	7.81	4.97	5.34
% PON (Sep)	61	39	47	50	61	95	65	57	31
Accumulated YTD	46.66	24.45	44.44	36.14	59.10	61.01	47.37	30.29	18.16
Normal accumulation YTD	45.85	27.60	46.32	37.15	56.78	49.11	43.81	25.52	27.71
% PON accumulated YTD	102	89	96	97	104	124	108	119	66

Table 1. Sep 2016 and Year to date (YTD) Rainfall (inches). Percent of Normal (PON).

Historical Rainfall and Temperature

	Puerto Rico		San Juan Area		IST		ISX	
1	1986	3.47	1940	1.49	2012	0.92	1981	1.07
2	1971	3.96	1987	1.73	1986	1.08	2015	1.27
3	1912	3.97	2006	1.78	1987	1.42	2001	1.64

Table 2. Driest Sep. on record.

	Puerto Rico		San Juan Area		IST		ISX	
1	1908	18.94	1996	15.15	1953	14.94	1996	19.15
2	1998	17.79	1989	14.83	2004	13.89	1953	9.80
3	1960	15.97	1928	13.68	2008	12.86	1954	9.03

Table 3. Wettest Sep. on record.

	Puerto Rico**		San Juan Area		IST		ISX	
1	2015	81.2	2012	84.9	1993	86.3	1993	85.3
2	1948	81.0	1995	84.9	1992	85.7	1972	84.9
3	2012	81.0	1982	84.5	1994	85.6	1997	84.8

Table 4. Warmest Sep. on record.

	Puerto Rico**		San Juan Area		IST		ISX	
1	1940	72.1	1910	79.3	1979	80.3	1954	80.0
2	1941	73.2	1921	79.6	1956	81.3	1978	80.3
3	1943	74.1	1904	79.6	2008	81.6	1955	80.7

Table 5. Coolest Sep. on record.

** Following years are not included due to lack of data: 1955, 1956, 1957, 1959, 1962, 1967, 1979, 1980, 1981**

	Puerto Rico	San Juan Area	IST	ISX
Temperature	79.2	83.5	84.0	83.1
Rainfall	8.12	5.77	5.58	4.86

Table 6. Normal Values for September

Monthly and Seasonal Highlights for Primary Climatological Data Sites.

	September	October	November	Season SON	Year to Date
San Juan Area					9 th warmest 81.4F
IST	4 th warmest 85.1F				3 rd warmest 83.0F 10 th driest 23.73
ISX					6 th warmest 81.8F

Table 7. Spring 2016

Additional Highlights Based on COOP Data

Wettest Days

Station	Inches (inches)	Date
MARICAO FISH HATCHERY	3.04	9/19/2016
MARICAO 2 SSW	2.95	9/20/2016
ADJUNTAS SUBSTN	2.47	9/22/2016

Highest Maximum Temperatures

Station	Temperature (°F)	Date
PONCE 4 E	98	9/29/2016
LAJAS SUBSTN	96	9/30/2016
MAGUEYES ISLAND	95	9/30/2016

Lowest Minimum Temperatures

Station	Temperature (°F)	Date
MARICAO 2 SSW	63	9/19/2016
PONCE 4 E	63	9/21/2016
AIBONITO 1 S	65	9/17/2016

Data is preliminary and has not undergone final quality control by the National Centers for Environmental Information / NCEI/. Therefore, this data is subject to revision. Report based on data received until September 7th 2016.

Puerto Rico Climate Record Period: 1940 to 2016

San Juan Metro Area Climate Record Period: 1898 to 2016 (Primary climatological site)

Cyril E. King Airport/St Thomas Climate Record Period: 1953 to 2016 (Primary climatological site)

Henry E. Rohlsen Airport/St Croix Climate Record Period: 1951 to 2016 (Primary climatological site)